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MONTHLY REPORT

1 July - 31 July 1962

RESEARCH AND DEVELOPMENT BRANCH
ENGINEERING STAFF

RESEARCH AND DEVELOPMENT LABORATORY

PROJECTS AND ACTIVITIES

2001-90 KE-24 TELETYPE TEST MESSAGE KEYSER ☐

25X1A9A

This project was reactivated this month, and every effort will be made to keep it active until the engineering model is completed. Estimated time for completion is mid-September.

2001-101 BT-10 MODIFICATION ☐

25X1A9A

Modification of 5 BT-10 tape transports was completed as of 31 July 1962.

2001-113 SUPPORT TO OC/SIGINT ☐

25X1A9A

Approximately twenty hours were spent on this project during July (modification of a geographer).

2001-114 MODIFICATION OF G43/G STAND & TSD STAND ☐

25X1A9A

This project was begun in late July and will continue through August. Requirements are for G43/G stand to collapse into a smaller package and for the TSD stand to be capable of mounting the G43/G generator.

2004-203 EVALUATION OF THE MODEL 960, UHF COMMUNICATIONS RECEIVER
30 - 300 MC ☐

25X1A9A

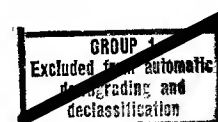
The performance of the equipment generally meets the specifications of the CR-16 Guardband receiver. The report is in process of being published and distributed.

2004-210 2 - 30 MC PREAMPLIFIER, SOLAR POWERED ☐

25X1A9A

Tests have been resumed on this equipment. Several component failures have occurred. Preliminary performance tests indicate that the gain of the preamp is somewhat less than that stated by the manufacturer.

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2004-211 AN/TRC-77 TRANSCEIVER EVALUATION ()

25X1A9A

The performance of this equipment is very satisfactory. The report is in process.

2004-212 COMPARISON EVALUATION OF THE JOHNSON-VIKING, GATES, AND AEROCOM TRANSMITTERS ()

25X1A9A

Tests on the Gates transmitter have been completed. Work on the remaining transmitters has been temporarily suspended because of higher priority projects.

2007-1 MAINTENANCE OF RADIATION DETECTION EQUIPMENT ()

25X1A9A

New batteries have been installed in 90% of the units. Five units have been repaired. Calibration will be completed during the next reporting period.

2007-78 AT-3 TRANSMITTER MODIFICATION ()

25X1A9A

Three each units not modified were returned to the warehouse pending decision as to external or internal modification of returned sets. Sixteen each have been completed and forwarded to the warehouse; 4 each are awaiting motors (); and 1 each, damaged by acid is under repair. 25X1A5A1

2007-81 INVESTIGATION OF A TESTING DEVICE TO BE USED FOR DETERMINING THE ELECTROLYTE LEVEL OF THE BS-3 BATTERY ()

25X1A9A

A sample round bottle with cap and filler tube that meets the requirements was received. The sample has been forwarded to Headquarters for comment.

2007-82 RT-42 SYSTEMS - FABRICATION ()

25X1A9A

Two each units have been completed and forwarded to Headquarters. Six each units are awaiting batteries () Fabrication is approximately 75% complete. 25X1

25X1A9A

2007-84 MODIFICATION OF MOTOROLA HANDI-TALKIE TRANSMITTER ()

We are awaiting return of units from Headquarters for completion of modification. The project is 90% complete.

25X1A9A

2007-85 FABRICATION OF MODIFIED CU-12 UNITS (CU-12A) ()

Ninety per cent of the parts for 20-unit production have been ordered. There has been no other activity, pending delivery of components.

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2007-86 FABRICATION OF KA-2 UNITS []

25X1A9A

Ninety-five per cent of the parts have been ordered for production of 50 units. We are also awaiting information [] concerning connectors.

25X1

2108-2 AGENT AUTOMATIC STATION TRANSMITTER, AT-3 (EVALUATION) []

25X1A9A

Tests on this unit are complete. The report is being written.

2108-3 AP-3A, AC POWER SUPPLY f/u/w AT-3 TRANSMITTER & BATTERY CHARGER FOR BS/A-3 & BS/B-3 []

25X1A9A

Tests on this equipment are almost complete. The contractor's representative spent 3 days in correcting objectionable features of the AP-3A power supply. Tests indicate that the power supply meets the voltage input requirements and all frequency requirements except on 50 operation cycle, which remains to be tested. Considerable improvement was made in reduction of unwanted radiation. Radiation remains somewhat high in the broadcast band.

25X1A

2164-1 RS-35 [] TRANSCEIVER []

25X1A9A

The electrical performance of the transmitters is similar to the test results obtained by the manufacturer. One receiver performed well while the other receiver was returned in the same condition (self-oscillation) as it was sent out. The deficient mechanical items found were: battery power cable, power switch on a battery case, and the antenna connector furnished by the contractor. These are not acceptable items.

2547 ONE-TIME PAD MATRIX, HL-6 []

25X1A9A

Production of the HL-6 is proceeding on schedule. Two machines are undergoing production testing and should be ready for shipment early in August. Two more machines are expected to be ready for shipment about September 1, 1962.

2554 RR-48 TRANSISTORIZED RECEIVER, CRYSTAL-CONTROLLED []

25X1A9A

The A&A has been completed on the production prototype. The performance of the modified RR-48 is similar to the original model. The antenna oscillator radiation is slightly higher than the original model. Fabrication of twenty-five production units is about 50% completed. The feasibility of using solar cells as a power source and a battery charger for this equipment is being investigated.

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25X1A 2555 [] SYSTEM, RS-52 ([]) 25X1A9A

25X1A The prototype [] was completed with 9 plug-in units for DC battery operation and delivered. A parts list is being completed for the procurement of parts for 10 additional units.

25X1A 2561 [] (PACKAGING OF RT-42 AND ASSOCIATED EQUIPMENT) [] 25X1A9A

25X1A Two [] base station equipments and two RT-42 field units have been completed. Seven additional field units are being fabricated under project No. 2007-82. The [] antenna was modified to accept a TV antenna. This work is completed.

2565 KE-22 BASE STATION KEYING UNIT ([]) [] 25X1A9A

Twenty production units are under fabrication. All mechanical work is completed and the chassis are 75% complete. Printed circuit boards are 25% complete, and shipment to stock will be made during the first part of September.

2567 CK-21 MORSE OFF-LINE KEYS [] [] 25X1A9A

The Morse recognition circuitry and the input character matrix are operating on breadboard. The memory driver breadboard operates correctly from -40 C to +70 C. This circuit has been laid out in an extremely small, welded, encapsulated, pluggable module. Mass tests of components are being carried out by summer students, so that aging slopes of the important parameters of each transistor will be known before it is installed in the prototype CK-21. Components with rapidly changing characteristics will be rejected. Work on the encryption matrix and sense amplifiers is under way. Core planes for the Vigenere square are nearly completed and experimentation on memory core aperture plates is continuing.

2570 CK-23 MORSE CODER-KEYER [] 25X1A9A

An idler wheel employing friction drive proved unsatisfactory, and the original gear drive is being reinstalled. Improvements in other moving parts made during experimentation will remain in the design. Mechanical work in the development of the engineering model is continuing.

2571 DESIGN OF RS-35 ANTENNA COUPLERS ([]) 25X1A9A

This project has been completed. Five each couplers have been forwarded to Headquarters.

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2576 AT-3 BATTERY CHARGER ()

25X1A9A

A project has been initiated to design and build a battery charger which will adequately charge the three and five ampere-hour nickel-cadmium battery supplied with the AT-3 transmitter.

The following project was completed and the report distributed this month:

2700 Ultrasonic Warning System - Transmitter and Receiver,
Model UC-3

Completed A&A projects - reports in process of being published and distributed:

2005-126 () Hybrid System
2096 Aluminum-Air Battery
2137A KE-19 and KE/A-19 Evaluation
2167 Ultrasonic Communications System, UC-1 and UC-2
2181 Direction Finder, DF-3 (Evaluation)
2573 Bifilar Helix Antenna

The instruction manual is in process of publication on the following project:

2540 Sub-Base QFM Reader-Exciter, AT-10

The following projects had no activity this month:

2004-213 SSB-5, 125 W (PEP) Single-Sideband Transmitter/Receiver
2005-127 Voice Privacy Transceiver ()
2005-128 () Receiver
2007-61 Circular Intercept Antenna Evaluation
2007-65 Investigation of Low-Frequency Warning Transmitter
2007-74 Investigation of New Tube Types
2108-5 AT-3 Test Set
2172 PS-4 Modification
2182B HD-2 Pipe Receiver
2188 Portable Microwave Communications System, RS-43
2532 One-Watt Transmitter, RT-38
2533 ()
2560 Rechargeable Power Supply for RS-1 or RS-6
2566 8-Cell Battery Pack
2574 ()
2575 KE-22 with HS5 Capability (KE-25)
2671A-2 4 - 10 KMC Microwave Receiver, CR/B-36 (Evaluation)
2695 RR-45 Receiver

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Chief, Research & Development Laboratory

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